

**Electrification of clinics in  
Region E,  
Eastern Cape  
Post-electrification study in  
AmaNtshangase, AmaNdengane, Ludeke and  
follow-up in Mnceba**

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<p>Note: Certain figures and tables for this document are not available on the downloadable version, but only on the printed version available from EDRC</p>
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# Contents

<i>Acknowledgement</i>	<i>ii</i>
<i>List of maps</i>	<i>iv</i>
<i>List of photographs</i>	<i>iv</i>
<i>List of tables</i>	<i>iv</i>
<b>1. Introduction</b>	<b>1</b>
1.1 Background	1
1.2 Aims of the research	8
1.3 Method	8
1.4 Structure of the report	9
<b>2. Coordination</b>	<b>11</b>
2.1 Background	11
2.1.1 Non-grid	11
2.1.2 Grid	11
2.2 IDT and DoH	15
2.2.1 Non-grid	15
2.2.2 Grid	15
2.3 DoH and Eskom	16
2.4 Eskom and IDT	16
2.5 Local-level liaison	16
2.5.1 Non-grid	16
2.5.2 Grid	17
<b>3. Sustainability</b>	<b>20</b>
3.1 Training	20
3.2 Technical issues	20
3.3 Maintenance	21
3.4 Impact	21
<b>4. Context</b>	<b>23</b>
4.1 Administrative reform	23
4.2 Other improvements to clinics	23
4.2.1 Building, repairs and renovations	24
4.2.2 Water and sanitation	24
4.3 Supply of equipment	25
4.4 Integrated development	25
<b>5. Summary and conclusions</b>	<b>26</b>

## **List of maps**

1. District health and welfare services, former Transkei	2
2. Location of four settlements	3
3. Mvenyane, showing Mnceba / Mzalwaneni	4
4. Lower Ludeke	5
5. AmaNdengane	6
6. AmaNtshangase	7
7. IDT Clinic Electrification Programme	14

## **List of photographs**

1 & 2. Meeting with local residents, AmaNtshangase Clinic	10
3 & 4. Mission Complex, Ludeke	19
5 & 6. Mission Complex and Hlamandana Clinic, Ludeke	20
7 & 8. AmaNdengane and AmaNtshangase Clinics	23

## **List of tables**

Eskom Electrification Plan 1997	13
Ranking of problems at four clinics (1996)	24

# 1. Introduction

## 1.1 Background

Between February 1996 and October 1997, Independent Development Research (IDR) undertook a case study of schools and clinics electrification in Region E of the Eastern Cape. This study is an input into the Energy and Development Research Centre project entitled *The role of electricity in the integrated provision of energy to rural areas*, which aims to assist in the development of appropriate rural electrification (RE) policies for South Africa and to provide practical assistance to RE implementing and funding agencies.

The case study comprised three component studies which explored the Eskom grid and non-grid electrification of school programmes and the Independent Development Trust's (IDT) clinic electrification programmes. The first two studies were undertaken by IDR in early 1996 and early 1997 respectively. The first was a pre-electrification study of four settlements which focused on the local-level context in which electrification was to take place and the perceptions of local actors regarding electrification. Two of these settlements fell within the Eskom five-year grid-electrification plan and two outside it – in areas where provision had been made for PV electrification of the schools and clinics. The second study comprised an examination of the electrification process from the respective points of view of the service providers (Eskom and IDT) and the departments responsible for education and health.<sup>1</sup>

A post-electrification study was then conducted in August through October 1997 in the same settlements in which the pre-electrification study was conducted, namely Mnceba (Tabankulu) and Ludeke (Bizana) both of which are grid-plan areas, and AmaNdengane (Bizana) and AmaNtshangase (Bizana), both non-grid areas.

As indicated in Map 2, both Ludeke and AmaNtshangase are located on, or near, main roads, whereas Mnceba and AmaNdengane are some distance from main roads and are less accessible.<sup>2</sup> Map 1 depicts the location of the two magisterial districts within the former Transkei and the presence of various health and welfare services. The location of the clinics and other services in the various settlements are represented on the hand-drawn maps which follow.

The results of the study of clinics electrification are outlined in the report below, and analysed in the context of the first two studies. Two other reports have been produced dealing with the Eskom non-grid electrification of schools in non-grid areas and grid electrification of schools in grid areas.

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<sup>1</sup> Laura J. Bedford. Electrification of Clinics and Schools in the Former Transkei: Pre-electrification Study in Mnceba, Ludeke, AmaNdengane and AmaNtshangase. EDRC June 1996; Laura J. Bedford. An Assessment of the Process of Electrification of Schools in Region E of the Eastern Cape. EDRC March 1997.

<sup>2</sup> All maps reproduced from Bedford (June 1996).

**Map 1: District health and welfare services, former Transkei**

**Map 2: Location of four settlements**

**Map 3: Mvenyane, showing Mnceba / Mzalwaneni**



Map 4: Lower Ludeke

**Map 5: AmaNdengane**

**Map 6: AmaNtshangase**

## 1.2 Aims of the research

The clinics component of the third study was intended to be primarily concerned with examining the extent to which the potential benefits of electrifying clinics had been realised. The impact of the local-level context on the process itself was also examined. The following issues were investigated:

- The impact of electrification on services provided at clinics was assessed by exploring their utilisation of electricity. The views of local-level actors were examined regarding the impact of electrification, focusing on local perceptions of the benefits and constraints of electrification.
- The views of local-level actors were to be examined regarding the place of electrification within the overall needs for the services and other plans for improvement or actual improvement to these services.
- The clinics electrification process and institutional arrangements were examined and analysed, focusing on local-level participation and consultation. Constraints at the local-level (institutional and other) which may impact on the electrification process were explored. Further, the views of local-level actors regarding the constraints and opportunities inherent in the process were examined.

## 1.3 Method

The research within the settlements involved prior visits by two researchers to the settlements, and notification of key individuals of the research plans. Permission to stay at AmaNtshangase<sup>3</sup> and Mnceba Clinics was granted by the Community Health Matron (St Patrick's Hospital) and sisters in charge of the clinics at this stage. Approximately one day was spent by two researchers investigating clinic electrification in each of the four settlements<sup>4</sup>. Interviews were also conducted with key individuals at the regional Department of Health (DoH) (Kokstad) and St Patrick's Hospital in Bizana. Following fieldwork, brief discussions were held with the Energy and Development Group (EDG; consultants to the IDT).

It was initially envisaged that an impact assessment would require observation of electricity utilisation and appliance acquisition as well as exploration of local-level perspectives regarding impact. Field visits to clinics would take place including observation, discussions and participatory exercises with clinic staff. Although preliminary investigations had indicated that the clinic in Ludeke had been given a point of supply, it did not in fact have an operational electricity supply. As such, 'impact' was negligible. Nevertheless nursing staff were interviewed.

The electrification of Mnceba was originally part of the Eskom 1997 plan but had been 'rolled over' to early 1998. Discussions were held with staff of the clinic there. Both clinics in the non-grid areas were experiencing problems with the PV systems which had been installed. A number of discussions were held with nurses and other clinic staff at both AmaNtshangase and AmaNdengane Clinic.

It is important to note that interviews and discussions with local residents and clinic staff did not involve further 'needs' assessment or prioritisation of possible improvements due to the lack of clear plans to meet other needs or provide other improvements at this stage. Such research should only be undertaken in the context of planned delivery.

Meetings and discussions were held with the following key role-players:

	<i>Position</i>	<i>Institution</i>	<i>Place</i>
1	Matron and approx. 20 nurses	St. Patrick's Hospital	Bizana

<sup>3</sup> The decision to stay at AmaNtshangase Clinic during the course of research in this settlement as well as research in AmaNdengane and Ludeke was based on an assessment of the relative safety of the various settlements. Notably, a good relationship had been established with the Nkosi in AmaNtshangase and electricity was working at the nurses' residence in AmaNtshangase, but not in AmaNdengane, which the researchers felt would provide greater security.

<sup>4</sup> In a number of cases, meetings which had been scheduled had to be rescheduled and thus multiple visits were essential in most cases. The research at each location was thus conducted over a period of a few days.

2	Physical Planning Dir. + Acting Deputy Dir.	DoH	Kokstad
3	Regional Director	DoH	Kokstad
4	Consultant Engineer	EDG	Cape Town
5	Electrification Manager + Electrification Planning Manager + Customer Liaison Man.	Eskom Area Office	Shelly Beach
6	Senior Electrowise Advisor + SACS Manager	Eskom Depot	Kokstad
7	Elected electrification representative	-	Ludeke
8	Sister in charge	Hlamandana Clinic	Ludeke
9	Reverend	Ludeke Mission	Ludeke
10	Elected councillor	-	Mnceba
11	Electrification contractor	DLV	Mnceba
12	Sister in charge and domestic worker	Mnceba Clinic	Mnceba
13	55 local residents + ANC rep. + headman	-	AmaNtshangase
14	Domestic worker and nurse	AmaNtshangase Clinic	AmaNtshangase
15	14 local res+headman+Chair of Clinic Comm	-	AmaNdengane
16	Sister in charge + Domestic worker + nurse	AmaNdengane Clinic	AmaNdengane

#### 1.4 Structure of the report

The report comprises five sections including this introduction. The second section focuses on the coordination between various role players in the planning and provision of electricity to clinics. The third deals with issues of sustainability including training, technical aspects of the PV systems, maintenance arrangements and usage of electricity. The fourth examines the wider context in which clinics electrification is taking place, such as the shifting administrative structure, plans for other improvements to clinics including supplies of equipment and, finally, the place of electrification within a wider development framework.

**Photographs 1 and 2.** AmaNtshangase Clinic, AmaNtshangase: Local residents including members of local tribal and ANC leadership. Researcher, Ms. Makhanye in blue dress. Showing night watchman's hut at the gate entrance and the security light at the gate (not working at the time of the research). Entire perimeter of clinic property is security-fenced.



## 2. Coordination

### 2.1 Background

#### 2.1.1 Non-grid

The IDT's rural energy programme for clinics falls within the IDT's Rural Development Portfolio and focuses on the provision of electricity (grid and non-grid) to provide lighting and power essential for use of equipment at rural clinics. Overall responsibility for the programme of clinics electrification resides with the IDT national office in Cape Town. EDG are the project engineers for the non-grid clinics electrification component. Within the Provincial DoH, the Physical Planning Director is ultimately responsible for the planning of electrification of clinics in the Eastern Cape.

The IDT has undertaken to electrify with solar systems those clinics which fall outside of the Eskom five-year plan and are located more than four kilometers from the proposed grid. At the time of the research 48 of 55 clinics on the solar electrification plan had been electrified.

The Planning Director within the Regional DoH explained that the IDT had come up with the proposal to electrify (using photovoltaic systems) those clinics which fall outside of the five-year grid-plan. He noted that, from the outset, this idea was not welcomed by matrons and nurses because of bad past experiences with solar (or PV) systems. The DoH had set up a meeting with the nurses and matrons where the IDT had explained to the nurses that the type of system to be installed was superior and more advanced than the ones they had experience of in the past. For example, it would allow for outside lights and run a vaccine refrigerator. The DoH had agreed to the photovoltaic (PV) route, but the nurses suggested that a clinic be piloted first to see how it worked. Within a week or two, a solar system had been installed at this pilot clinic and everyone was satisfied with the way it worked. The IDT was given the go-ahead.

#### 2.1.2 Grid

All clinics which fall within Eskom's five-year grid plan will receive a point of supply in the course of the electrification of any given area. The responsibility for internal wiring of clinics is that of the IDT. However, the Eskom plan has altered over time, with a slowing of pace and a reduction in area. The capital limit per connection has recently dropped to R3100.<sup>5</sup> In fact, due to the changing capital limit, Eskom Shelly Beach has switched its focus to former Transkei areas and away from KZN due to the higher population densities in the former Transkei areas. Nevertheless, clinics which fall outside a grid-plan area in the former Transkei areas will not get a point of supply, and delays in other places have meant the delay of the electrification of clinics in these areas.<sup>6</sup>

The ready-board which Eskom installs at clinics runs on a pre-payment system. The clinics receive a normal household supply (20 Amp S1). The customer (household or clinic) must pay an installation fee of R65, which may be done before or after installation. The customer then receives an ID card which proves they have paid. This ID card is essentially a license to buy electricity according to the prepayment system. A certain number of units is made available when the meter is installed. Once these units have been used up, another card must be purchased. The DoH has undertaken to pay for electricity used at clinics in grid areas.

In May 1996 a meeting was held between the Eskom and IDT project managers, where the issue of electrification of schools and clinics was clearly spelt out. An Eskom surveyor met with IDT planners and together they mapped out which clinics would be grid and which would be non-grid. Over time, however, the lack of clarity regarding Eskom's grid electrification plans has created planning constraints for the IDT, but should be seen in the context of the difficulties Eskom has experienced in working with Tescor plans for the former Transkei areas as well as recent budget cuts. Some clinics which were to have been electrified in the course of the five-year plan have now been delayed or have

<sup>5</sup> The Customer Liaison Manager from Eskom Area Office explained that, where possible, clinics will be connected even if they exceed the capital limit.

<sup>6</sup> One example of an area where electrification has been delayed is Mnceba in Tabankulu, where the electrification was originally planned for early 1997, but has been rolled over to early 1998. Electrification will only take place in the event of money becoming available – that is, there is still no guarantee that this area will be electrified.

fallen outside this process altogether. These clinics will have to be identified and reworked into alternative electrification plans.

Apart from difficulties associated with a slowing and reduction in Eskom's programme, the internal wiring of clinics which have received a point of supply has also stalled in Region E. The IDT Programme Manager explained that there had been some problems with awarding a tender for the internal wiring of clinics in the region:

We issued a tender in May 1997 for the electrification of clinics in these areas by means of grid extension. No contractors responded to this first tender and we reissued an amended tender in July 1997. Contracts for this tender thus still have to be awarded.  
(Personal correspondence, August 1997)

The Eskom Electrification Plan for 1997 and the IDT Clinic Electrification Programme Map are inserted on the following pages.



**Table 1: Eskom Electrification Plan 1997**

**Map 7: IDT clinic electrification programme**

## 2.2 IDT and DoH

### 2.2.1 Non-grid

The programme is a joint project between the IDT and the provincial DoH. Although the provincial DoH is short-staffed, and this has led to some communication problems, liaison with the DoH is extensive. Throughout both the planning and implementation of the electrification, there has been a person in the Regional DoH whom the IDT contacts for trouble-shooting on a day-to-day basis. The relatively high levels of coordination within the various tiers of the health administration in the province have also led to a vertical integration of planning. The relatively small scale and slow pace of the planning and implementation processes have also permitted clinic-to-clinic planning and implementation and high levels of local-level involvement.

### 2.2.2 Grid

The DoH has indicated that the IDT has failed to meet its commitments in some cases. The Physical Planning Director in the Regional DoH noted that the Flagstaff Clinic – which became the District Health Office (DHO) – had been promised by IDT since 1995 that they would get internal wiring and yet it was never installed. Recently the DoH decided that they should arrange to pay for the wiring at the Flagstaff DHO themselves and had done so. Further, IDT had undertaken to provide generators to about twenty private (non-DoH) clinics in the region. To date, however, not a single generator has been made available by the IDT.

The degree of coordination between the IDT and DoH as regards clinics in grid areas is difficult to establish. In the case of Hlamandana Clinic in Ludeke, however, there appears to have been some degree of confusion. The Regional DoH Physical Planning Director argued that Hlamandana is one of the clinics which should be getting a generator system from the IDT because it is privately owned. He was not aware that the Eskom had installed a ready-board at the clinic – or that it is part of the IDT plans to internal wiring in Grid Phase One. According to the Reverend at the Mission, the community will pay for the internal wiring of the clinic although 'this may also be paid for by the DoH'. In fact, Eskom (Shelly Beach) has said that the clinic is in such poor physical condition that it should not be internally wired.

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### Hlamandana Clinic

In early 1996, IDR researchers were informed by Mfundisi and the staff at the clinic that the buildings under construction in the Mission were the 'new nurses residence' and that a plot had been set aside for a new clinic at the Mission (Bedford 1996). In mid-1997 construction of these buildings was still ongoing but the plans for these buildings had changed and a great deal of confusion surrounds the status of the clinic there. The following explanations were given:

**Mfundisi:** The DoH has promised to build a new residential clinic at the Mission and the Mission has given the land to the people for this purpose. The DoH has turned down the new buildings because they said they were not suitable for a clinic and so now they will be rented out to local residents as 'flats'.

**Sister in Charge of the Clinic:** Some women in a red Sentra came here some time ago from some NGO and told us that they were coming back to renovate the clinic and build a residential clinic at the Mission as soon as they have finished the repairs to another clinic in another area. St. Patrick's Hospital is responsible for this clinic and will pay for the electricity. It is pointless putting 'tubing' (internal wiring) into this Clinic as it stands because it is beyond repair. The Hospital turned down the new buildings because they are not suitable. The one is to be uFundisi's new house and the other will be rented out as 'flats'.

**Community Health Matron (St. Patrick's Hospital, Bizana):** The clinic falls within the jurisdiction of this Hospital and the Hospital is responsible to supply it with whatever it needs, including electricity. The DoH owns the building but the Mission owns the land the clinic is on. It is not clear what the plans are for a new clinic or internal wiring of the old one.

**Regional DoH, Kokstad:** There are no plans for renovations to Hlamandana Clinic and it is not on the list for clinic upgrading. This is because it is privately owned by the Ludeke Mission and

the DoH is not responsible for it or for its electricity bills. The IDT was supposed to include this clinic in its plan for electrification with generators because it is privately owned. The Regional DoH is not aware that it has in fact received a point of supply.

**IDT:** Has listed the internal wiring of Hlamandana Clinic as a Grid Phase I project.

**Eskom:** Eskom automatically put in a point of supply to the Clinic as part of the electrification of the whole area but would not recommend internal wiring of the clinic because it is in such a poor state of repair and it would be unsafe to do so.

## 2.3 DoH and Eskom

According to the Planning Director, Regional DoH, there has been no liaison with Eskom Area Office whatsoever. Eskom Shelly Beach also indicated that they have had no contact with the DoH.

## 2.4 Eskom and IDT

A Joint Steering Committee (JSC) including representatives from the Eskom grid programme, NGE, Department of Education (DoE), DoH and IDT has been meeting every three months. The JSC is alternately chaired by DoH and DoE. This is a formal channel of communication through which the Eskom grid electrification programme and IDT are meant to coordinate their respective programmes. However, the Eskom Area Office explained that the Eskom grid-electrification programme for the Eastern Cape is represented by a staff member from the East London Office of Eskom,<sup>7</sup> whereas the grid electrification programme for Region E is driven from the Shelly Beach Eskom office. There is little communication between the two offices. This, and the fact that Shelly Beach does not attend these meetings, has meant that there has been a breakdown in communication between Eskom Grid and IDT with respect to Region E.<sup>8</sup>

Clearly, the current lack of coordination between various government departments and service providers has the potential to impact negatively on the overall development of communities. While the coordination channels between the IDT and Eskom exist, they have not been effective in creating a meaningful dialogue. Given the different scope, scale and speed of the schools electrification programme and the IDT's clinics electrification programme, simultaneous implementation may have proved unfeasible. Nevertheless, there is scope for a great deal more engagement and cooperation to, at least, prevent duplication.

## 2.5 Local-level liaison

### 2.5.1 Non-grid

The IDT has tended to work through the DoH in order to facilitate local level liaison and participation. Electrification plans have been passed through to the local structures by personnel from the regional health departments via hospitals and district offices, and input from local structures has been passed on to the IDT via the Regional DoH. At the final planning stage, each site is visited by the consultants, contractors and the DoH District Officers and community health matrons from the hospitals who meet with nurses and tell them of the plans. Various issues, such as the location of plug points and of the refrigerator, were discussed. The responsibility for ensuring that clinic staff know when the contractors will be at their clinic to do the installation was handed over to the Regional DoH.

The Community Health Matron at St Patrick's Hospital holds weekly meetings with nurses from all clinics which fall under the administration of the hospital. The close coordination at a local level has facilitated the rapid resolution of problems as they have arisen. If there are problems, the Matron reports these directly to Kokstad. She explained that the DHO<sup>9</sup> is 'really only for transport issues and

<sup>7</sup> Eskom Area Office indicated that its communication with Eskom in East London is very limited. An Eskom Bisho Office was also opened in order to facilitate communication between the various offices, but no communication has taken place.

<sup>8</sup> In fact, the Eskom Area Office thought that the Joint Steering Committee was no longer functioning.

<sup>9</sup> The Flagstaff DHO is responsible for clinics and hospitals in the districts of Bizana, Lusikisiki and Flagstaff.

minor things'. The Regional DoH indicated that there was good communication between the DHOs and the Regional Office, but also pointed out that there is a problem with lack of capacity at this level (and with nurses) and this may lead to problems not always being reported. The Regional Director stressed the need for 'capacity building'.

### 2.5.2 Grid

The Senior Electrowise Advisor at Eskom Depot, Kokstad, said that, because of uncertainties regarding plans and budgets, Eskom does not notify residents in an area of electrification plans until confirmation is received that money is available for a project. Local residents are informed during the marketing phase (Phase 1) when Eskom arrives and signs up all customers in an area. Clinics are automatically connected.

With respect to the electrification of clinics, the Kokstad Depot receives the applications and then forwards these to the Eskom Area Office. In Phase 2 the contractor puts in the high-voltage power and low-voltage power lines using local labour.<sup>10</sup> The contractor then briefly describes to the customer how the system works and how to use it.<sup>11</sup> Following this, the customer is given a compliance certificate. The ready-board and light bulb with two-metre extension are left on site.

The *Fundisi* at the Mission in Ludeke explained that sometime last year the local residents had been informed that the area was to be electrified but actual electrification was subsequently delayed for four months. A man from Eskom came and held a meeting to tell people about electricity, with Eskom giving out pamphlets describing its dangers, advantages and disadvantages. The local people had a meeting after this to discuss the issues. Many people in the area were employed on the project to dig the trenches, put in the poles, and so on. Whereas the electricity was working in parts of Ludeke, there were some technical problems with the supply to lower Ludeke, where the clinic is located, and it had never worked in this area.

The Sister in Charge at Hlamandana Clinic in Ludeke explained that the electrical ready-board at the clinic which was installed the previous month has never worked. She thought that it had not been switched on as yet. She did not know how the board worked – whether it was a prepayment system or not. She said that some people had just arrived and asked where to put the ready-board. She had asked them to find the best place and they had then installed it and put in a bulb with a plastic lampshade. She did not know anything about the plans for internal wiring of the clinic. The elected Eskom contact person in the Ludeke area also said that he did not know anything about the electrification plans for the clinic.

The Sister in Charge of Mnceba Clinic explained that no-one had come to Mnceba to tell them what the plans were for electrification. The nurse had spoken with some Eskom people at the Mvenyane site and they had told her that Mnceba would be electrified in April 1998. In fact the DLV contractor working in an adjacent area had no idea what the plans were for electrification of Mnceba and was not aware that there was a clinic located there. A local elected councillor in Mnceba said that Eskom had told them nothing about the delays or plans and had not interacted with the District Electrification Forum based in Tabankulu and also had not spoken with the TRC. He said that there was a problem with lack of consultation.

<sup>10</sup> Approximately two people per ward. People contact the local Electrification Forums to apply for this work.

<sup>11</sup> The education of customers is the responsibility of the Promotion Department based in Margate.

**Photograph 3.** Mission complex, Ludeke Mission: 'New nurses residences' under construction as they were at the time of IDR's research in early 1996. (Source: Bedford 1996)



**Photograph 4.** Mission complex, Ludeke Mission: The same buildings – now to be the new house of Mfundisi and the 'flats', including a point of supply to each.





**Photograph 5.** Mission complex, Ludeke Mission: From left to right: new house of *Mfundisi* built by local residents, still under construction; 'flats' also under construction; preschool which is now disused due to a flood and which did not receive a point of supply as a result; Hlamandana Clinic with single pit latrine for clinic to the right of the building; current house of *Mfundisi*.



**Photograph 6.** Hlamandana Clinic, Ludeke: Showing point of supply, poor building condition. Mission complex supplied with water from dam above clinic.



### 3. Sustainability

#### 3.1 Training

In the case of PV-electrified clinics, the Community Health Matron and the nurses all said they had not been trained in basic system functioning or routine maintenance and that a number of problems had resulted from this. An 'informal' training had taken place which the Matron had attended, but she said that a more thorough training was needed. While EDG indicated that all nurses had in fact been trained,<sup>12</sup> it was recognised that there was a need for further training. As a result, EDG had been asked to return and give further training in the functioning of the systems, routine maintenance and 'trouble-shooting.' This training was held over five days in mid-September. The Matron indicated that it had been a success and that nurses were now reporting no problems with the systems. The direct contact between EDG and the DOs and Matrons led to a swift resolution of this issue.

Another problem raised by local residents was that no-one in the settlements had been trained in basic functioning and maintenance of the system. It was argued that someone who resides in the area should have been shown how it works because the nurses are not always in the area and in the event of a fire someone should know how to switch it off. The domestic worker at the AmaNdengane clinic also noted that she was usually at the clinic, but that she had not been trained – the contractors had said that the nurses would explain everything to her, but they had not done so as they did not know themselves. The night watchman at the clinic also said that they had done the installation without consultation. He said that even he had not been shown where to switch the electricity on and off: 'When a baby is born you show him how to sit and then how to stand – I am saying the same thing.'

#### 3.2 Technical issues

The Regional Director in Kokstad noted that:

The IDT had promised a whole new breed of solar, but we are hearing that the systems are not working very well. But it is difficult to objectively assess whether the current IDT programme is working well or not, because the problem may be a hangover from a former attitude towards solar – inherited from the former government. Also, we do not have a set of indicators with which to judge whether the systems are faulty or just working as they are supposed to. A major problem is that we have very little information about the systems.

Certainly, at the time of the research numerous issues were being raised by nurses, with the Community Health Matron indicating that many of the nurses were experiencing problems with either the solar refrigerators or the solar electrical systems – or both. As a result, the Matron felt that generators would have been a much better option. The DoH had supplied TVs for residential clinics, but until the problems were resolved she did not intend to distribute these or other equipment and so all this was being stored at the hospital. Nurses from various clinics explained the problems they were experiencing to the researchers and confirmed what the Matron had said. It was noted that, as a result of the malfunctioning of the systems and refrigerators, a lot of medicines had been spoilt and had to be thrown away. However, following the five-day training the Matron indicated that these problems had been resolved and, in fact, the systems were all functioning correctly. It had been a matter of training.

Nevertheless, a specific problem which emerged from clinics in the highland and mountainous areas quite soon after the installation of the systems was that when it snowed the systems would not work for a few days. The Physical Planning Director indicated that the Regional DoH and EDG have been working closely to resolve this problem. EDG has suggested that windmills could be used to boost the systems in inclement weather. It has been decided to pilot five clinics to see if this will work.<sup>13</sup>

<sup>12</sup> Notably, the handover certificate at each clinic states that the signatory 'understands the basic functioning of the system'. However, the nurse at AmaNdengane Clinic who had signed the certificate said that she did not know anything about the system but had signed the form anyway. Moreover the nurses at one clinic said they had been left with no instructions, although there was an operating manual sitting on the desk. This had never been used.

<sup>13</sup> Namely one in Umzimkulu, one in Mt. Frere, one in Maluti and two in the largest District, Flagstaff.



### 3.3 Maintenance

While the contractors have a built-in one-year maintenance contract for the maintenance of PV systems at clinics, over the longer term the DoH will be expected to replace the lights and do basic maintenance.

Although nurses all reported that a maintenance man had been to their clinics over the previous week,<sup>14</sup> neither they or the Community Health Matron knew his name or who had sent him. The Matron indicated that it was a problem that the hospital was not always informed when people made contact with the clinics. As a result, she had recently asked all nurses to learn the identities of people who came to the clinics for such things and to keep a record of such visits.

At AmaNtshangase clinic, the staff explained that the system had been working before this man had come to service the system, but that it was now malfunctioning. The man had left an address to contact in the event of problems, but no-one had contacted him. At AmaNdengane Clinic the man had come to the clinic in the late afternoon and the nurses were not there. The domestic worker had signed a form which she could not read – because he had asked her to. He had not been able to speak Xhosa (and she speaks no English) and so she did not know who he was or what he was doing there although he had ‘done something to the system’.

### 3.4 Impact

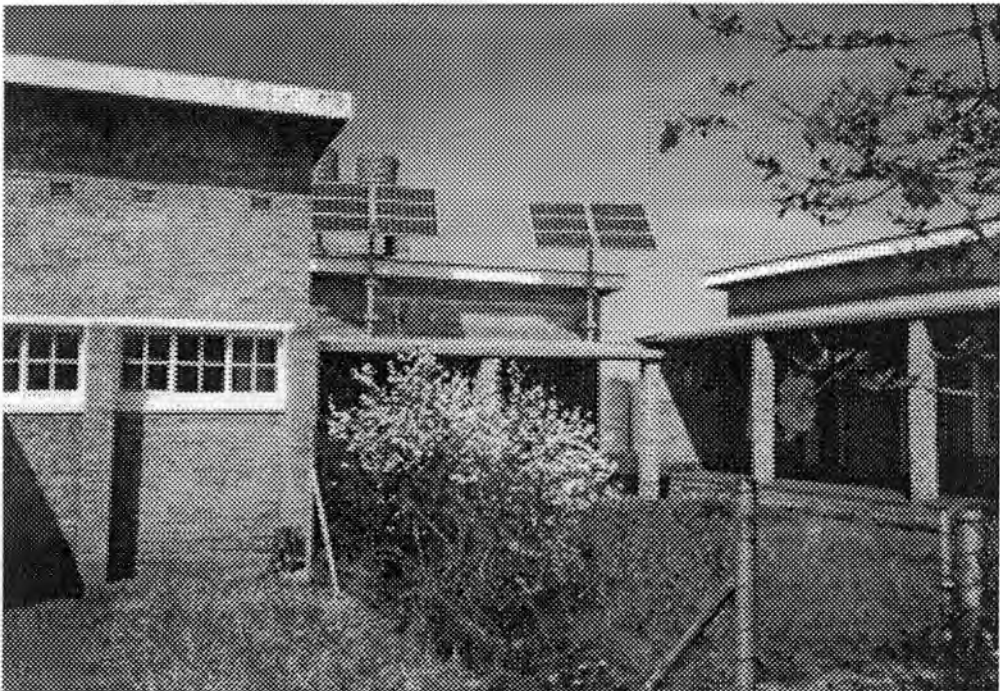
It was found that some improvements had taken place, albeit limited. Nurses at both AmaNdengane and AmaNtshangase said that the vaccine refrigerator and clinic lights (for security) were a great improvement. Supplies of medicines and basic requisites had been more plentiful. At AmaNtshangase Clinic a nurse had bought her own TV. She watched this every night and considered it to be an enhancement despite the poor reception.

Due to the fact that electricity supply to the Ludeke area was not working at the time of the research it was not possible to establish ‘impact’ in terms of utilisation of electricity in that area. Mnceba Clinic still had no electricity and the same applies.

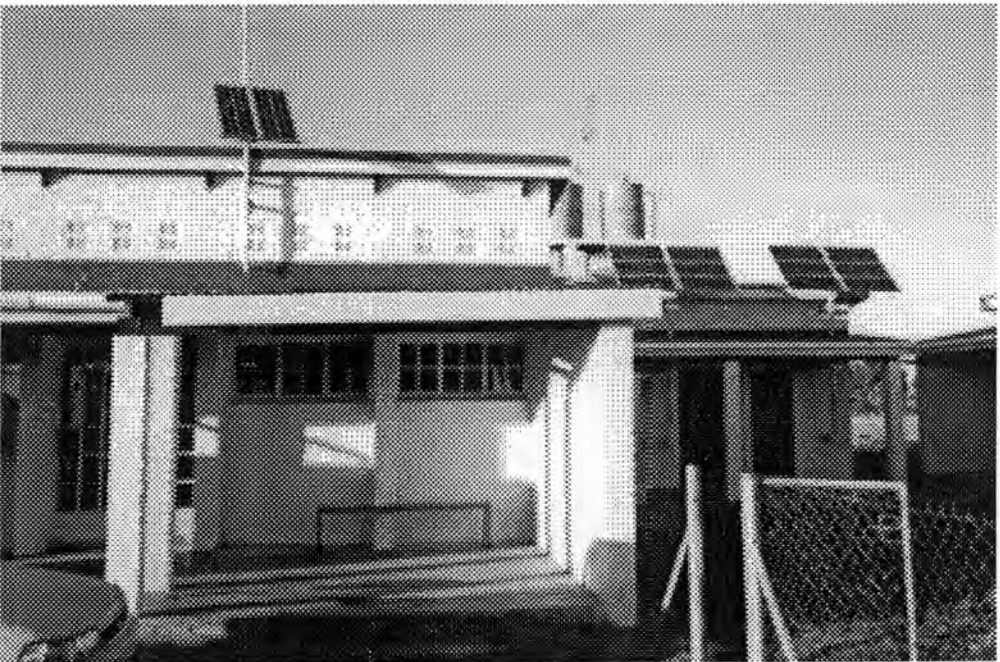
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<sup>14</sup> EDG indicated that IDT maintenance people had been working in the area at this time.

**Photograph 7.** AmaNdengane Clinic, AmaNdengane: Showing ground and roof rainfed watertanks (roof mounted tanks not functioning) and roof mounted solar panels. Note: Basic maintenance such as the 'squeegee' of solar panels will require a maintenance plan and is not something which can easily be undertaken by clinic staff.



**Photograph 8.** AmaNtshangase Clinic, AmaNtshangase: As above. Note: Fresh coat of paint.



## 4. Context

### 4.1 Administrative reform

The Community Health Matron and Physical Planning Director within the Regional DoH explained that, in line with the new administrative structure of the health administration in the province, a new budgeting structure for clinics was soon to be implemented to make nurses take responsibility for their own clinics – although the actual money would be held in Flagstaff or at the hospital. The nurses needed to be given a limit and to keep records of how much of various things they use. In this way they would learn to prioritise and this would lead to less wastage. The nurses in charge of clinics will be trained in budgeting. Payment for electricity used at clinics would come out of this budget.

Both the Matron and the Regional Director indicated that they were aware that there were many problems at the clinics, including absenteeism,<sup>15</sup> problems of training and capacity and a problem with the whole way the bureaucracy was functioning. In particular, the current system of clinic staff rotation was highlighted as impacting on the stable management of the institutions. It is for this reason that the five DOs in the Region had been established to play a local coordination role – ‘to bring solutions closer to the problems’.

### 4.2 Other improvements to clinics

The electrification of clinics is part of a much larger integrated programme which looks at the upgrading of clinics, the provision of water, sanitation, greening, and communication improvements. Clinics electrification comprises a part of the clinics and hospitals upgrading programme initially driven by the RDP Office via the DoH. The provincial and regional offices of the DoH take the decisions regarding the degree to which electrification of clinics is coordinated with other improvements to the services provided. At the regional level, regional coordinators have been appointed to coordinate electrification, capital works and maintenance programmes.

In early 1996 nurses at the various clinics ranked problems at the clinics as shown in the table below.

<i>Description of problem</i>	<i>Ama-Ntshangase (residential)</i>	<i>Ama-Ndengane (residential)</i>	<i>Ludeke (non-residential)</i>	<i>Mnceba (residential)</i>
Poor roads	1	-	-	2
Lack of transport	2	5	6	1
Shortage of medicines	3	1	-	3
Lack of electricity	4	2	8	4
Shortage of staff	5	7	-	7
Water supply	6	-	2	5
Shortage of equipment/instrument	-	-	5	9
Limited scope of practice	-	8	-	-
Job satisfaction / salaries	-	3	-	-
Lack of maintenance	-	6	-	-
Lack of security	-	4	-	-
Accommodation for security guard	-	-	4	-
Poor relations with hospital	-	-	-	6
Unreliable refrigeration / gas	-	-	1	8
Lack of furniture	-	-	7	-
Telephones / communications	-	-	9	-
Lack of / quality of toilets	-	-	3	-

<sup>15</sup> This problem was noted in AmaNdengane. Locals indicated that nurses may only arrive twice a week – whereas the clinic is residential and meant to be always open

**Table 2: Ranking of problems at four unelectrified clinics in the former Transkei**  
*Source: Bedford (June 1996: 24)*

In 1997 it was noted that, apart from the benefits of electrification and an improvement in medicine supplies mentioned above in section 3.4 and the few mentioned below, no other significant improvements had taken place to any of the clinics. The number of patients at all clinics did not appear to have increased since research in early 1996 and remained between 50-60 per day during the week and 10-20 per day on weekends.

#### **4.2.1 Building, repairs and renovations**

The DoH identified the need to integrate electrification into the prioritised repair to clinics (from the maintenance budget). In addition to upgrading, numerous clinics are being built under the RDP clinics-building programme which is being run through the DoH and the IDT. The building and maintenance of physical structures is implemented by the Department of Public Works and has necessitated coordination between these two government departments. In the former Transkei areas, however, the Department of Public Works lacks capacity, which has led to some delays in the programme.

The Physical Planning Director, Regional DoH, indicated that the DOs had been asked to go out and consult with people to identify priorities in terms of clinics for renovation. There are funds available currently for small repairs such as leaky roofs. At AmaNtshangase Clinic renovations were taking place at the time of the research. Pathways and paving were being fixed, the lawn had been mowed and the clinic had recently been painted. No other improvements to the physical structure of clinics was noted.

There is some confusion regarding the plans for renovation of Hlamandana Clinic in Ludeke relating to the issue of ownership of the clinic (see Section 2.2.2). The Sister in Charge at Hlamandana said the clinic was owned by the DoH and she and the *Fundisi* at the Mission both said that there were major renovations and extensions planned for the clinic.<sup>16</sup> The Regional DoH denied this. The Regional DoH Physical Planning Director said that due to the Mission not giving permission for the DoH to take over the clinic there were no plans for DoH renovations to the clinic because it does not belong to DoH.<sup>17</sup> On the other hand, the *Fundisi* said that the Church had given the clinic land to the people and that it is a DoH clinic. The Community Health Matron said that Hlamandana Clinic was handed over to the DoH in 1976. It is however a 'temporary structure' and although the structure still belongs to the Mission the clinic is run by the hospital. According to the Sister in Charge at Hlamandana Clinic new buildings which have been built at the Mission, which had been planned as nurses' residences (and built by the community), are in fact going to be rented out as flats to people by the Development Committee. They were not approved as clinic premises by the hospital.

The Sister in Charge at Mnceba Clinic said that in April 1997 two men had come to the clinic and taken photos, saying that they would be putting razor wire around the clinic. She thinks they were from the IDT. They had also said there were plans for a new guard house, and an extension of the nurses residence because there is a shortage of staff at the clinic. They had not mentioned electricity. In early September two men had come with the Matron from Sipetu Hospital and taken some more photographs. They had asked the nurses if the clinic had electricity and they had said that it did not. She thought that the men had come from a site in Tabankulu where a clinic is currently under construction.

#### **4.2.2 Water and sanitation**

Most clinics in the former Transkei suffer from inadequate water and poor sanitation. The design of roof-mounted water tanks installed in the 1980s at many clinics in the former Transkei was poor and the tanks are in a state of disrepair and are usually leaking. Nevertheless, the issue of water and sanitation provision to clinics is being worked out and plans are being firmed up.

<sup>16</sup> Two women had come to the clinic earlier in the year and told her this. She did not know who these women were or where they were from.

<sup>17</sup> The state of this clinic is very poor indeed – and Eskom has indicated that it would be dangerous to internally wire it.

The DoH and the Department of Water Affairs and Forestry have been collaborating with respect to the provision of water to clinics.<sup>18</sup> One major drawback in this regard has been the absence of effective Regional Services Councils in the former Transkei areas. These are still new structures and lack capacity. Nevertheless, the District Health Offices have been given the responsibility of forwarding a list of priorities for water provision to the Regional DoH.

According to the ANC Coordinator in the Ludeke area, there is a water reticulation plan for the whole area – the whole of Bizana town and surrounding areas. There are a series of dams being constructed and a water purification plant. Many people in the area already have tapped water or will be getting it soon. The clinic, located at the Mission, has access to water piped to the Mission from a nearby dam.

The Sister in Charge at Mnceba Clinic explained that water is a major problem there. If the tanks run dry the clinic is expected to get water from the river pump; there are no water deliveries. In May 1997 a man had come to the clinic and 'fixed' the pump which pumps water into the roof tanks to work the internal plumbing. It had worked while he was there, but started leaking again when he left. He had also explained to them about the pit latrines (VIPs) for which they were grateful, because no-one had explained before not to close the lids.

### 4.3 Supply of equipment

Each clinic which receives a solar system is also provided by the IDT with a solar-powered vaccine refrigerator and a medical examination light on wheels. In addition, at the end of 1995, the DoH and Welfare allocated from the capital works budget between R8 000 and R12 000 (depending on clinic size) to each clinic in the Eastern Cape for electrical and other equipment. If they are about to be electrified, the clinics have been asked to prioritise the electrical equipment they need and submit a list to the relevant District Health Office. This is then submitted to the Provincial DoH and Welfare for approval and the hospitals are given the mandate to order the equipment and supply this to the clinics. The Physical Planning Director, Regional DoH, Kokstad, explained that the DoH has promised to supply all clinics with the things they need, such as maternity lamps, refrigerators and stoves. They have the authority from Bisho to supply goods up to the value of about R7500 per clinic.

For their personal needs, the nurses employed at clinics in non-grid areas still use gas stoves for cooking and paraffin for heating. The DoH are providing each clinic with a four-plate gas stove and oven. Gas refrigerators are being left at the clinics for the personal use of the staff.<sup>19</sup> The hospitals will be responsible for paying the deposit on the gas cylinders but the nurses will have to pay for their own gas. The clinics are each meant to receive a TV set, but at the time of the research these had not been distributed by the hospital due to reports of problems with the PV systems throughout the district.

The nurse at Mnceba Clinic said that things had generally improved in the past year in terms of supplies to the clinics. They have much more efficient delivery of medicines than in the past. This was attributed to the transfer of the clinic from the jurisdiction of Mt. Ayliff Hospital to Sipetu Hospital.

### 4.4 Integrated development

The current lack of coordination between various government departments and service providers has the potential to impact negatively on the overall development of rural areas. In particular, it has been noted that Eskom, Telkom, the Department of Public Works and the Department of Water Affairs and Forestry are not working together sufficiently to promote integrated development. It has been stressed that lack of coordination has been one of the chief obstacles to both effective planning and, particularly, integrated implementation, and that it would be valuable if the different authorities could co-ordinate the upgrading of the various areas through some sort of Regional Development Forum.

In the interests of equity, every effort should be made to plan for the development of new services and improvement of existing services other than schools and clinics in non-grid areas. In particular, this relates to the provision of solar-powered water systems, alternative electrification of public buildings, churches, pre-schools, crèches and teachers' accommodation. The possibility of linking solar

<sup>18</sup> Water reticulation to rural areas is a responsibility of the Department of Water Affairs whereas Department of Local Government is responsible for reticulation to municipalities.

<sup>19</sup> The gas refrigerators may also serve as a back-up for the solar refrigerators in the event of them malfunctioning.



electrification of schools and clinics to other improvements such as solar street lighting must also be explored.

The issue of household electrification also needs to be addressed. One clear impact of the electrification of clinics (and schools) programmes is that questions are now being raised by local residents in non-grid areas regarding the electrification of other structures in the area, and household electrification in particular. For example, in one non-grid area, the *nkosi* asked why electricity had not been put into the Tribal Authority buildings and why the whole *lali* had not been electrified. Another resident of the area said that they were happy with the electrification of the clinic and schools but what they want is electricity in their households and insisted that the researchers arrange for Eskom come to the area and install electricity as soon as possible. If Eskom did not plan to electrify the area then they should at least come there themselves and explain why not.<sup>20</sup>

## 5. Summary and conclusions

The degree of coordination which has been achieved by IDT, EDG and various tiers of the health administration has resulted in an effective consultation, implementation and resolution of problems, in the case of the non-grid clinic electrification programme. The degree to which this has been achieved in the case of grid clinics has been difficult to gauge due to the stalling of this programme as a result of: 1) delays by Eskom in providing a point of supply; and 2) difficulties experienced by IDT in the tendering process for internal wiring in the region. At the same time, the DoH has indicated that IDT has not met its commitments with respect to internal wiring and provision of generators to clinics in the region.

Another issue which emerges here is that plans for internal wiring of clinics may not be well enough coordinated with plans for clinic renovations. The confusion surrounding the status of ownership, renovation plans and plans for electrification of Hlamandana Clinic in Ludeke is a case in point.

The provision of water to clinics must remain a priority. The momentum which has developed within the DoH in the course of the electrification programme must not be lost, but be reoriented towards planning for water provision. The integration of electrification with upgrading of clinics has been problematic in some instances largely due to capacity constraints within the Department of Public Works in the region. This has implications for improvements of road networks for clinics which must also be seen as a priority.

Although the Eskom Area Office for Region E and the DoH have no communication with each other, it is not clear what purpose such communication would serve. Rather, the breakdown in communication between IDT and Eskom is at issue here. Although a formal channel of communication exists in principle through the JSC, this has not been effectively utilised by either the Eskom Area Office or the IDT. Ways of forging appropriate links need to be found.

Teething problems in bringing the new health administrative structure on stream at a local level has led to some degree of duplication of roles between the hospitals and the new DHOs. This may contribute to some coordination difficulties at a local level. An illustration of this is the fact that maintenance crews reported to the DHO and not the hospital, whereas the hospital is still largely responsible for information dissemination to clinic staff.

Many of the problems with the PV systems at clinics stemmed from a lack of effective training of nurses in basic functioning of the system. Additional training was arranged and has led to a resolution of these problems. Nevertheless, it is clear that a demand exists for training of clinic staff other than nurses, including clinic nightwatchmen. Maintenance arrangements appear to be working adequately. There is, however, a need for maintenance personnel to identify themselves to clinic staff and explain what they are doing. Provision for supplies to clinics and arrangements for payment of electricity have been adequately established.

In the interests of equity, every effort should be made to plan for the development of new services and improvement of existing services other than in schools and clinics in non-grid areas. In particular, this

<sup>20</sup> The researchers did not probe this issue (for example, whether the type of electricity wanted was solar or grid) because no clear delivery plan exists for household electrification in this area at this stage.

relates to the provision of solar-powered water systems, alternative electrification of public buildings, churches, pre-schools, crèches and teachers' accommodation. The possibility of linking solar electrification of schools and clinics to other improvements such as solar street lighting must also be explored. The issue of household electrification also needs to be addressed. One clear impact of the electrification of clinics (and schools) programmes is that questions are now being raised by local residents in non-grid areas regarding the electrification of other structures in the area, and household electrification in particular.

Linked to this is an overarching issue which has emerged: local residents in rural areas should be informed of the general status of the grid and non-grid electrification programme – and the limitations of the grid programme in particular. This is probably not something which should be seen to be the responsibility of the IDT, DoH or Eskom within the context of the electrification of clinics. Rather, the empowerment of local people through a better understanding of the place of electrification within the larger development process is something which needs to be addressed at a more general level, probably nationally.



# **Electrification of clinics in Region E, Eastern Cape: Post- electrification study in AmaNshangase, AmaNdengane, Ludeke and follow-up in Mnceba**

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